

IT Transformation at Oak Ridge National Laboratory



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ORNL circa 2000

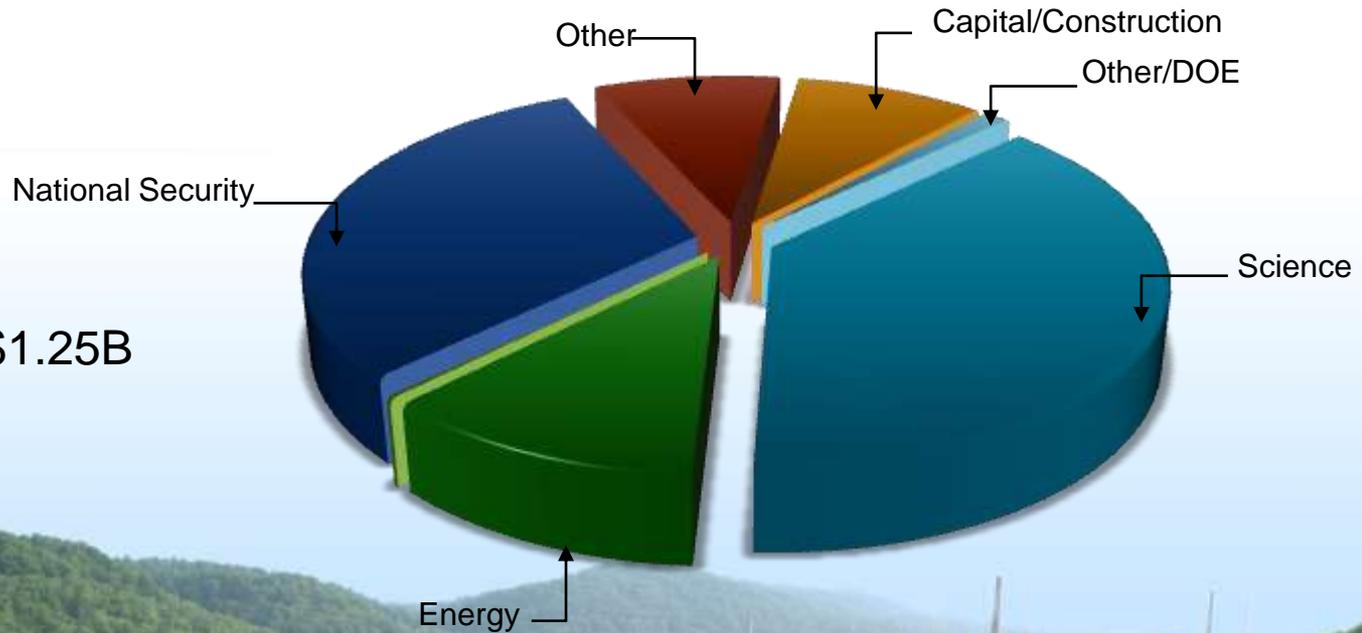


An artists vision for “campus of the future” (Circa 2000)



Oak Ridge National Laboratory

Mission: Conduct basic and applied research and development to create scientific knowledge and technological innovations that enable the solution of compelling national problems



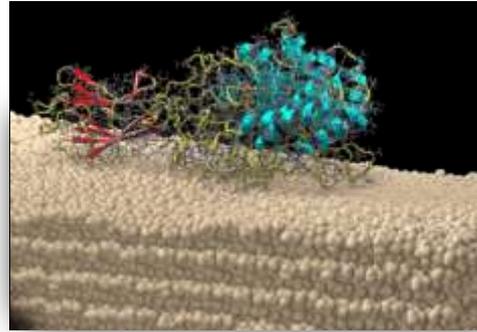
FY08 budget: \$1.25B

4,350 staff

ORNL's Mission Is Scientific Discovery

The Stuff of Dreams

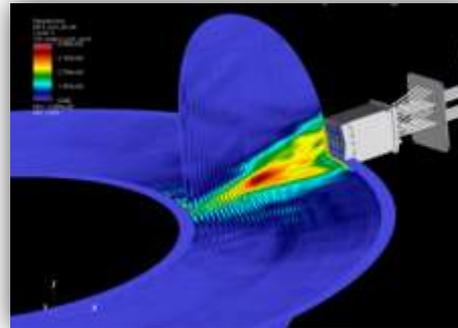
- Limitless clean energy
- Quantified impacts of atmospheric CO₂
- U.S. cellulose based fuel rather than oil
- Drug delivery systems that release medicine precisely where needed



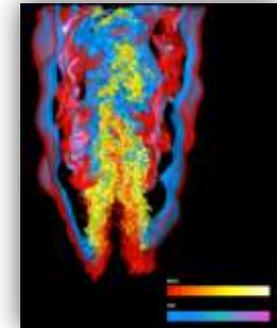
New insights into cellulose-to-ethanol conversion



Climate code for global, dynamic CO₂ exploration



Simulations of fusion reactor



First 3-D simulation of flame including chemistry, temperature, and flow

Neutron science

Supercomputing

Systems biology

Nanoscale materials

Energy technologies

National security

Big Science Takes Big Instruments

Which produce big data

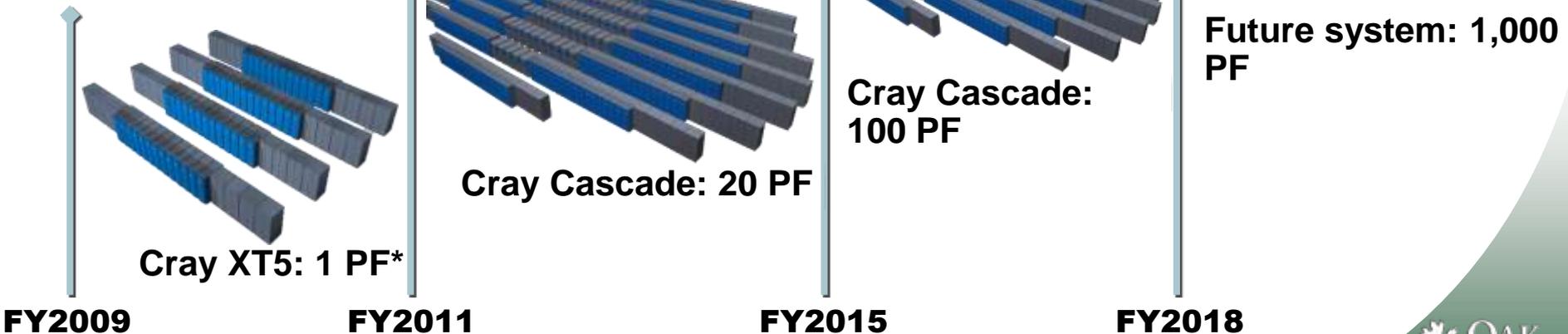
SNS

- \$1.4B construction



Supercomputers

- ~\$100M each
- ~1 acre each
- ~5 MW power each



ORNL 3 year IT Turnaround Strategy

Consolidate IT Staff

Cyber Security Revitalization

- Enforcing Network Compliance – Stafford
- Update on Network Enhancements – Piercy
- Who's Your System Administrator - Willoughby

IT Governance & Standards

- Advanced Windows Operating System Imaging and Deployment – DeGuira
- Lessons Learned in Implementing SCCM – Cunningham
- Change Management/Control in the SAP Environment – Scoggins
- Central Helpdesk Standardization and Consolidation – Causby/Beane

Application Transformation

- Enhancing Communications through Unifying – Depp
- IT University – Overby
- Sharepoint as ORNL Portal - Begovich

2006

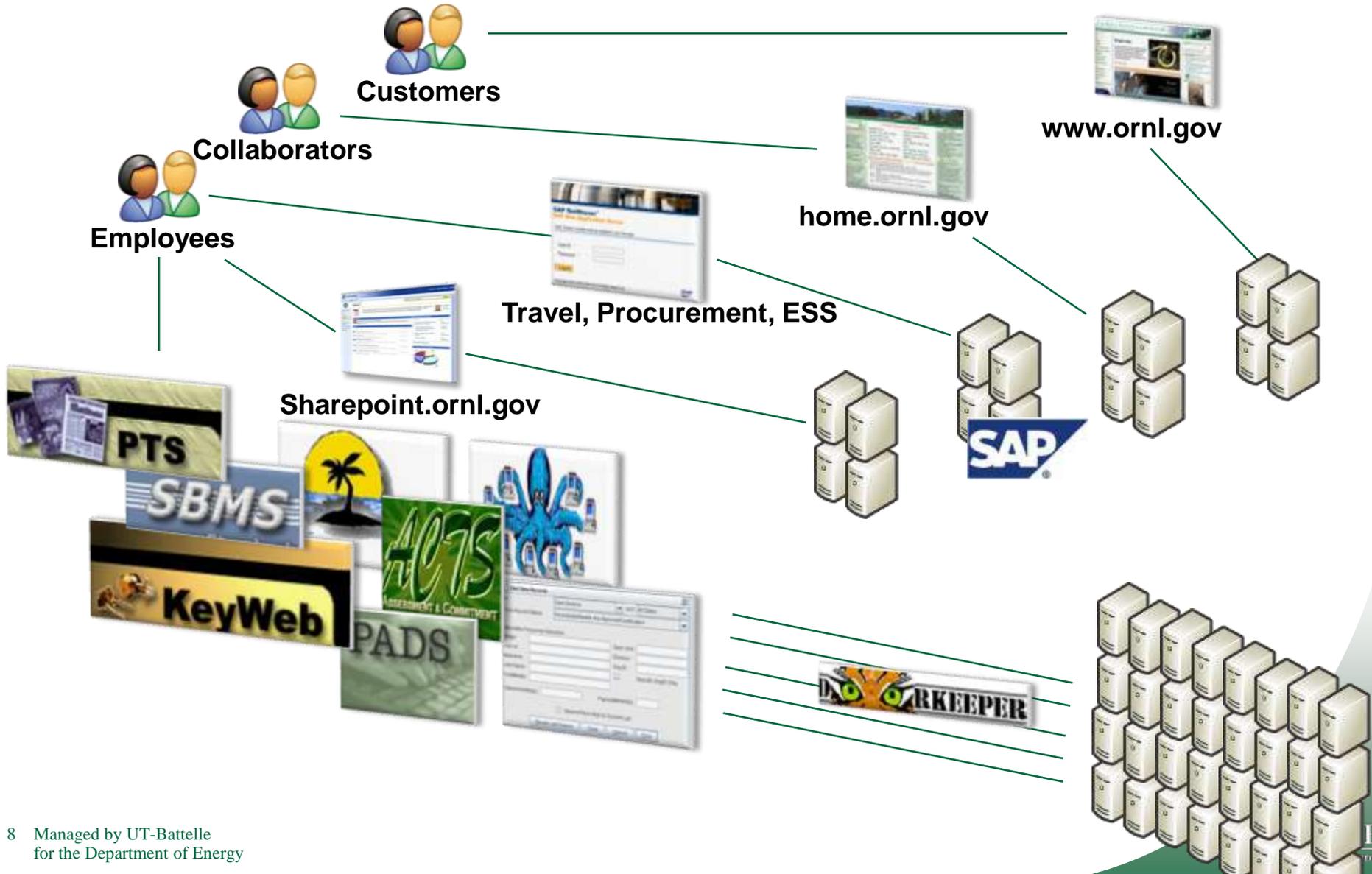
2007

2008

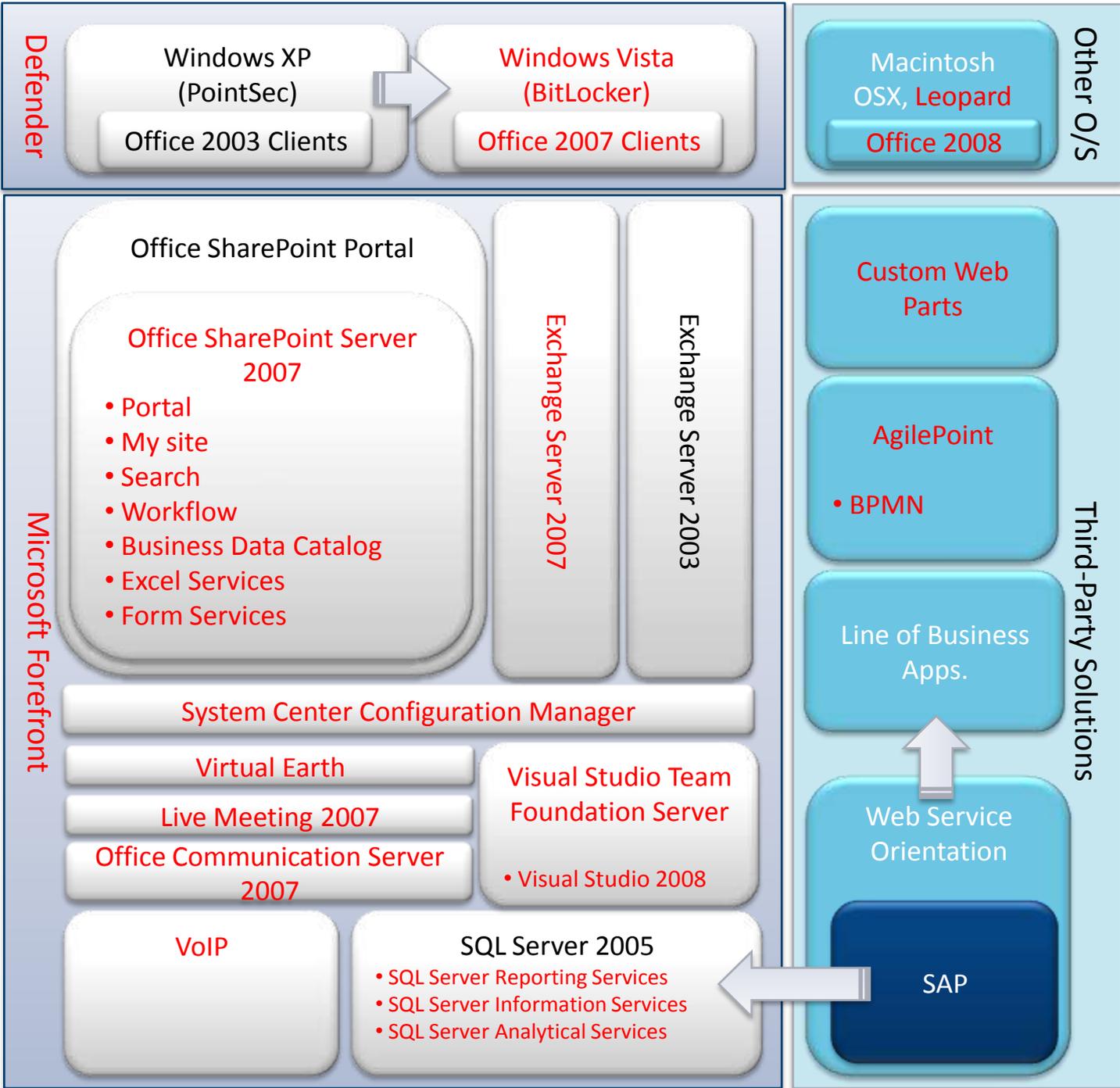
While maintaining a consistent
or reduced cost profile

Historic User Experience

Multiple disjointed systems – Chaos at its best



Every wonder what would happen if you rebuilt the infrastructure all at the same time?



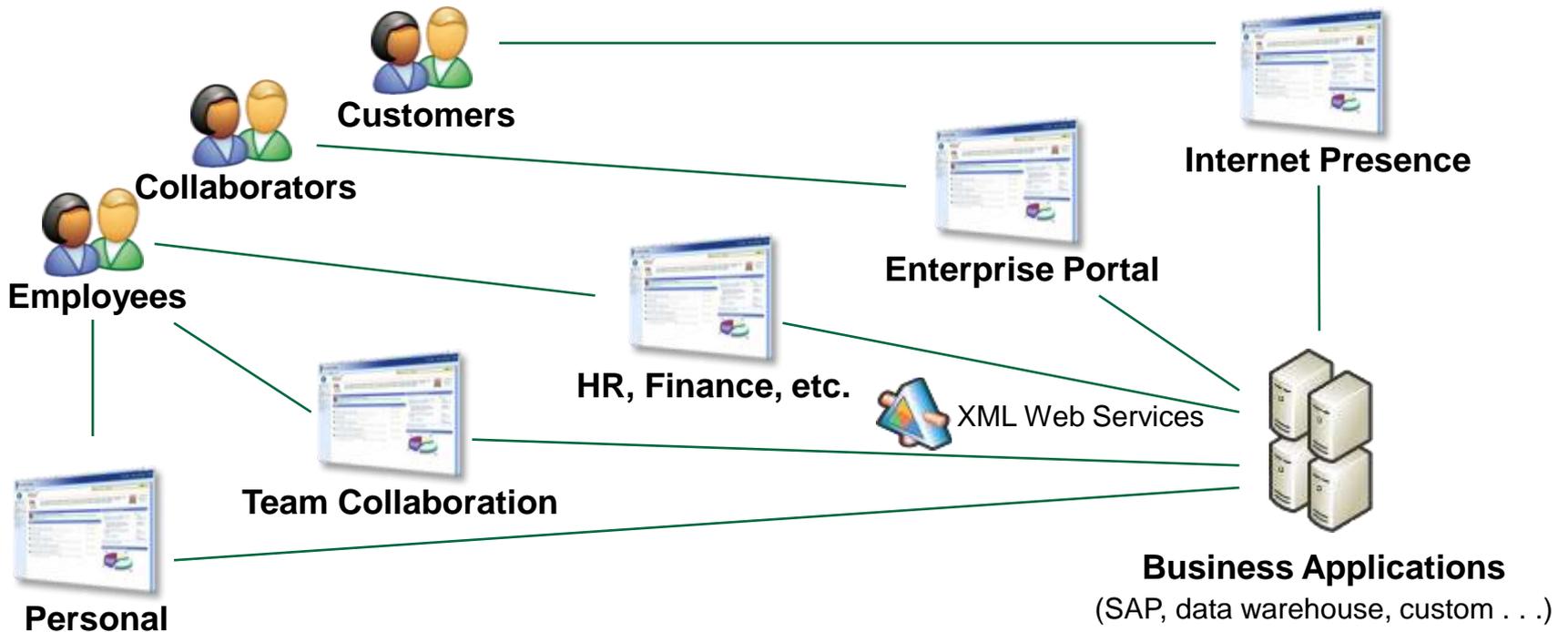
Red: Deployed in last 12 months

IT is at this phase right now.



Unified User Experience

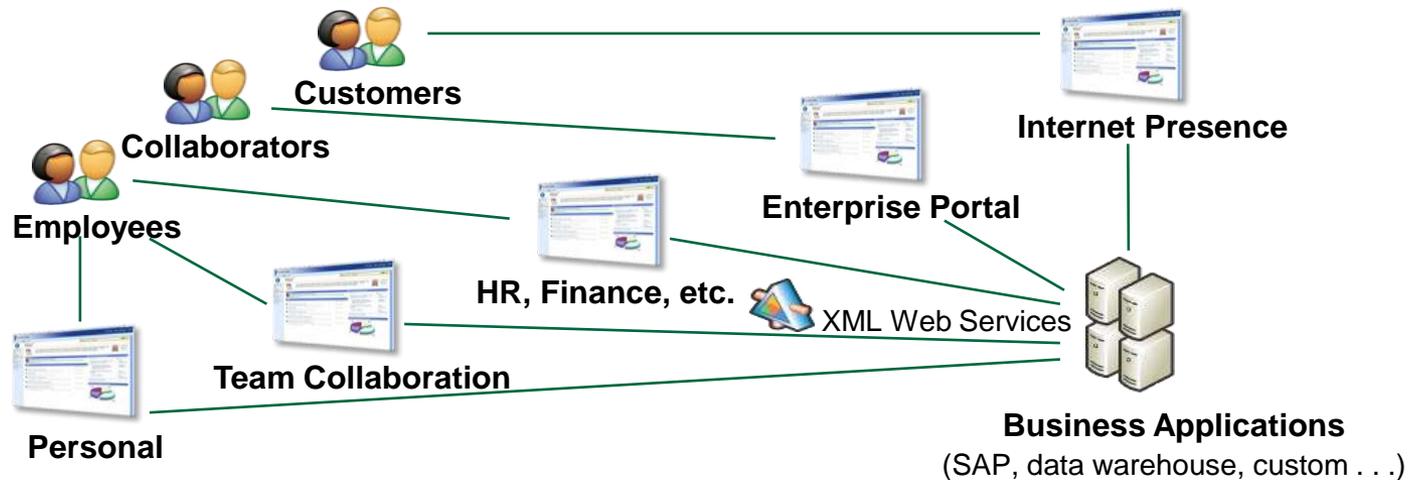
A common interface regardless of who or where you are



- The user has direct control over the posted content and no longer needs IT staff assistance.
- Make enterprise data easier to access
- Make the business of R&D more predictable
- Mine the data at the lab to create knowledge
- Facilitate cross discipline collaboration

Demonstrations

- Make enterprise data easier to access
- Make the business of R&D more predictable
- Mine the data at the lab to create knowledge
- Facilitate cross discipline collaboration



Make Data More Contextual And Personal

demo

Demonstrations

- **Make enterprise data easier to access**
- **Make the business of R&D more predictable**
- **Mine the data at the lab to create knowledge**
- **Facilitate cross discipline collaboration**

**Science and discovery
are unpredictable
and nonlinear**

BUT

**We are asked to deliver
scientific breakthroughs
on schedule, with a
focus on near-term
results**

From Federal Regulations to Crisp Action

demo

Demonstrations

- **Make enterprise data easier to access**
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- **Mine the data at the lab to create knowledge**
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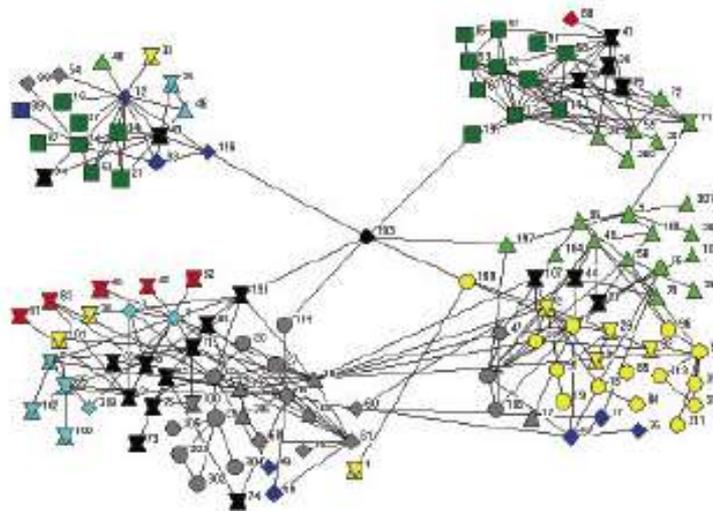


Real-time Knowledge Discovery

demo

Demonstrations

- **Make enterprise data easier to access**
- **Make the business of R&D more predictable**
- **Mine the data at the lab to create knowledge**
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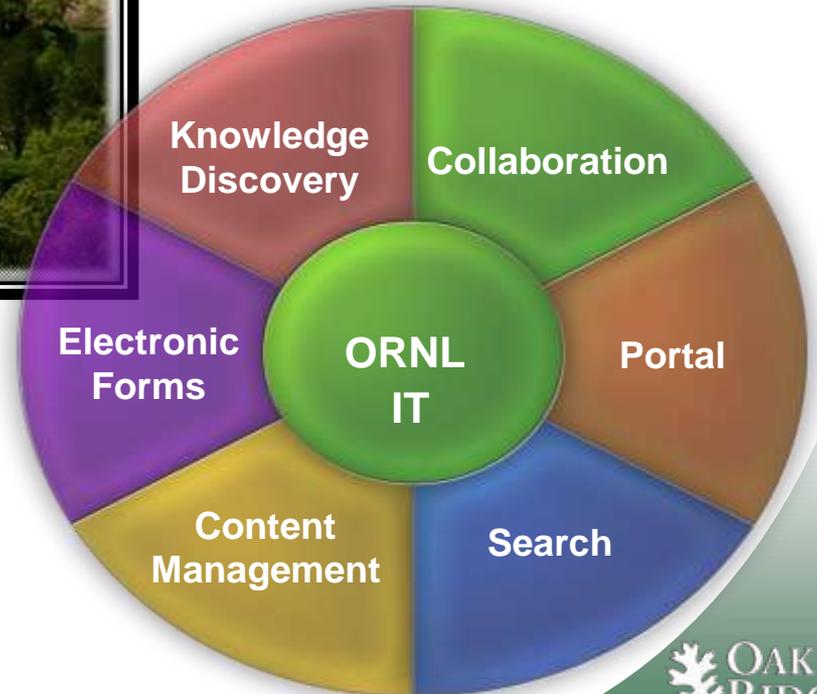
Expertise Location & Collaboration

demo

IT Lesson's learned

- **Executive support and vision is critical.**
- **Adoption is driven by training or comfort with Web2.0 technologies. Build a training program.**
- **Pick a unified architecture and stick with it. IT staff will want to debate the technical solution. Don't.**
- **Get a project team that buys into a unified solution and isolate them until the fruits of their work start to be clear to all.**
- **Find strong partners.**
- **Do it quickly.**

Any project requires a vision



"Vision without implementation is hallucination"

- Benjamin Franklin

